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COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
STATE OF MARYLAND

UNIVERSITY OF MARYLAND
U. S. DEPARTMENT OF AGRICULTURE
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VEGETABLE GROWERS' NEWS LETTER

Issued by
The Maryland Vegetable Growers' Association
W. R. Ballard, Secretary Treasurer

Vol. IX. No. 1 College Park, Maryland January , 1932

The Annual Meetings

The first session held jointly with the Crop Improvement Association and the Tobacco Association was well attended. The general topic for discussion was Crop Rotation, and Soil Fertility as related to dairy farms, truck and canning crops and tobacco. The topic "Fertilizer Recomendations under the New State Law", was discussed by J. E. Bopst. One of the changes to be noted is that from now on nitrogen will be reckoned as nitrate rather than as ammonia.

At the second session Thos. H. White presented an interesting paper giving important results of tests in the production of sweet potato plants. W. R. Beattie discussed "Some Factors in Modern Vegetable Production". Dr. DeVault presented the results of a study recently made of "Some Factors Influencing Profits on Maryland Truck Farms.

The Potato Show was larger than that of last year and created considerable interest. The exhibits were judged by Thos. H. White of the Experiment Station and C. E. Temple, State Pathologist. Trueness to type and uniformity counted 50% and freedom from disease counted 50%. Only certified seed stock was eligible. The prizes were awarded as follows:

CLASS IX- Irish Cobblers

1st place - Clark Smith, Pocomoke, Md.
2nd " - F. J. Dykes and Bro., Girdletree, Md.
3rd " - W. A. Ward, Pocomoke, Md.
4th " - W. T. Bunting, Pocomoke, Md.

CLASS X - Rural Russet

1st place - Boyd Hardesty, Oakland, Md.
2nd " - D. A. King, Accident, Md.
3rd " - J. Wilbur, Hoyes, Md.
4th " - E. F. Garletts, Selbyspert, Md.
5th " - E. F. McClintock, Accident, Md.
6th " - R. Seabold, Hoyes, Md.

CLASS XI - Any other variety of potatoes

1st place - Handy Truitt, Snow Hill, Md., McCormick.
2nd " - R. W. Stagg, Jr., Snow Hill, Md. Jersey Redskin.
3rd " - Samuel Hearn, Laurel, Md. Jersey Redskin.

CLASS XII - Sweet Potatoes, any variety.

1st place - W. P. Hotton, Salisbury, Md., Bigstem Jersey.
2nd " - H. P. Elsy, Salisbury, Md. Bigstem Jersey.
3rd " - Curtis Wolff, Rhodesdale, Md. Littlestem Jersey.
4th " - Harry Messick, Seaford, Del., Littlestem Jersey.
5th " - W. T. Pilchard, Pocomoke, Md., Bigstem Jersey.
6th " - W. T. Bunting, Pocomoke, Md., Bigstem Jersey.

Ten Ton Tomato Clubs

The contest conducted during 1931 by the Extension Service in cooperation with the Tri-State Packers' Association was recently brought to a close and the winners reported by T. D. Holder, Specialist in Canning Crops. The awards were made as follows: First Award: Mrs. B. B. Wiley, Forest Hills, Harford County. Yield 15.77 tons per acre, on 2.54 acres. Variety, Marglobe. Second Award: H. F. McConnell, Havre de Grace, Harford County. Yield, 11.57 tons per acre on 5.1 acres. Variety, Marglobe. Third Award: Fred C. Jones, Darlington, Harford County. Yield 10.23 tons per acre on 5. 1 acres. Varieties, Marglobe, and Greater Baltimore. Fourth Award: Harvey E. Simmers, Rising Sun, Cecil County. Yield 10.081 tons per acre on 3.084 acres.

Ripening Tomatoes with Ethylene Gas

One of the interesting tests conducted under the National Rural Electric Project on the farm of J. T. Seibel was the ripening of green tomatoes artificially. These tomatoes were placed in the cellar October 16th and gas was injected October 20th and every second day thereafter until November 2nd when the last of the tomatoes were removed. Mr. Seibel figured that his net profit on 184 baskets was$42. 30. Anyone interested in the details should write to the National Rural Electric Project, University of Maryland, College Park, Md.

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Vegetable Grower's News Letter

Issued by

The Maryland Vegetable Grower's Association
W. R. Ballard, Secretary-Treasurer.

Vol. IX No. 2. College Park, Maryland February 1932.

Food Value of the Potato

The following quotation from Grubb and Guilford's book "The Potato" is of considerable interest. While written in 1912, the main features still hold, although later work has indicated that the potato is in addition a fairly good source of certain vitamins.

"The potato is not only an easily digestible foodstuff but possesses much higher nutritive value than is generally supposed. According to Gautier, about one fourth of the weight of the potato is food substance, consisting chiefly (nine elevenths) of starch. Of the remainder, three fifths are protein, the tissue-building element, and two fifth alkaline salts in combination with citric and malic acids, the acids of the lemon and the apple.

"From a dietetic standpoint, the potato is perhaps slightly deficient in protein, though this statement would be disputed by some physiologists whose experiments appear to demonstrate that the amount of protein contained in the potato is quick sufficient for ordinary bodily needs.

"The potato is certainly deficient in fats, of which it contains almost none, because of the fact that it is not, like so many of our vegetable foods,a seed, but a curiously modified and enormously fleshy tuber. This deficiency in fat must always be remembered in the use of the potato, and the lack must be made up by the addition of cream, butter, or some other foodstuff rich in fat.

"What the potato lacks in fat and protein, however, it makes up in salts, which constitute nearly 5 per cent of its dry substance and are perhaps its most characteristic quality from a dietetic standpoint and one of its chief excellences. These salts consist chiefly of potash, and in the ordinary form in which they are supplied do a most important service in maintaining the alkaline condition of the blood, which is essential to good health and resistance to disease. The alkaline salts of vegetables are needed to balance the dietary. If the consumption of potatoes in this country could be quadrupled, the result would undoubtedly be the saving of many thousands of lives annually and an incalculable amount of suffering from

disease.

"The great nutritive value of the potato, notwithstanding the fact that it is three fourths water, may be best shown by comparing it with other known foods. A study of the nutritive value of various common foodstuffs shows that one pound of baked potato is equivalent in total nutritive value to the quantities of various foods shown in the following table:

Food Equivalent in Total Food Value to One Pound of Baked Potato.

1½ pounds of boiled potato
5-7/8 ounces boiled beef
1 pound of chicken
1½ pounds of codfish
2¼ pints of oysters (solids)
4 pints of clams (inshell)
4½ pints of beef juice
10 pints bouillon or beef tea
1½ pints whole milk
3 pints skimmed milk
8 eggs
9 ounces baked beans
7 ounces bread
1-3/4 pints oatmeal or corn meal mush
1-1/3 pints hominy (cooked)
1 pint boiled rice
1 pound of bananas
2 pounds parsnips (cooked)
1 pound green peas (cooked)
3 pounds beets (cooked)
4 pounds boiled cabbage
4 pounds radishes
5 pounds tomatoes
5 pounds turnips (cooked)
6½ pounds cucumbers

"From the above table it will readily appear that the potato is one of the most nourishing of our common foods. Its value is still further emphasized by the fact that steamed or mashed potato digests in two or three hours, whereas roast beef requires four to five hours, or double the time (Gautier.")"

VEGETABLE GROWERS NEWS LETTER

Issued by
The Maryland Vegetable Growers Association
W.R. Ballard, Secretary-Treasurer.

Vol.IX No. 3. College Park, Maryland March, 1932.

Potato Recommendations

The Maryland Potato Improvement Committee made up of Specialists of the University of Maryland and County Agents of Garrett and Worcester Counties outline the following recommendations in their 1932 program.

1. The use of certified seed of known origin has been amply demonstrated as productive of higher yields than stocks not so certified.

2. Properly fertilized fields will produce larger yields of marketable potatoes at lower costs.

The following fertilizers are recommended for Maryland:

Early potato fertilizer analysis 6-6-5, rate of application, 2000 lbs., made up ofnot less than 20% organic nitrogen and containing some sodium nitrate and ammonium sulphate. The potash to be preferably muriate.

Early harvested late potatoes analysis 3-8-8 and on land having manure and legumes turned under and 4-12-4 on less fertile soil. Rate of application, 800-1000 lbs.

Late potatoes analysis 2-12-4 on fertile soil that has been manured and 6-6-5 on soil low in fertility. Rate of application, 600-800 lbs.

The committee recommends that growers place on the market only such lots of potatoes as meet U.S. grade requirements.

It is further recommended that the use of federal state shipping point inspection be encouraged whenever the service is available.

Weather

The winter this spring has done considerable damage to vegetable crops now in the field. Reports are not yet available but early crops in southern producing areas have undoubtedly been seriously injured.

For severity and duration the recent spell has broken the record of many years for the month of March in this State.

Horse Radish Roots Wanted

Warren Shinn, nurseryman of Woodbury, New Jersey wants the names of Maryland growers of horse radish who have stock to sell. Members who have available stock or who know growers who do have surplus stock should communicate with the above mentioned firm.

Canners

Low prices offered for canned foods in stock and the uncertainty of future business conditions have discouraged many of the Maryland canners. The competition of fresh vegetables in recent years has been quite important and reduction in the cost of tins has not paralleled reductions in returns from the canned products. This situation will be reflected in lessening outlets for the farmer's crops and his marketing problems are already complex enough.

The Pritchard Tomato.

This new tomato promises to be the best of the varieties originated by the late Frederick J. Pritchard. This was originally sent out for trial under the name of Scarlet Topper, but has now been rechristened The Pritchard in recognition of a man who has contributed such important varieties of new tomatoes. This new variety is described as being very early and developing large, smooth, very solid fruits. The deep globe shaped fruits are intense scarlet in color and ripen uniformly to the stem. In trials it is said to have been quite productive. If further trials support its early promise, it may soon become the leading early variety for market.

Annual Report

The manuscript for the annual report of meetings held in Baltimore last January has just been edited for the printer. This report should be in the hands of the members before this but it is often delayed through inability to get all the papers in on time. It should not take long to get the material printed, since the separate reports are being issued before the combined report from all the organizations is assembled.

The 1932 Outlook .

The annual Maryland Agricultural Outlook for the year 1932 has just been issued By the Maryland Extension Service. Whether or not growers can get from it any helpful guidance may be a question. It does, however, contain considerable information regarding the general economic situation which is helpful in understanding some of the causes of the present depressed condition.

Some features which may have an encouraging relation to the agricultural group might be noted. "The prevailing low prices of vegetable crops would seem to give growers near the large markets an advantage over those from a distance who must add high transportation costs". Fertilizer prices will be lower than in 1931 and it is probable that prices of other things farmers must buy will come down more rapidly in proportion than the products he will have for sale. It is likely that farmers may be relatively in a better position than previously. So many confusing factors are involved, however, so that one man's guess may be as good or as bad as another. In any event everyone should keep on keeping on "looking to the hope that springs eternal in the human breast."

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VEGETABLE GROWERS NEWS LETTER.

Issued by
The Maryland Vegetable Growers' Association,
W. R. Ballard, Secretary-Treasurer.

Vol. IX. No. 4. College Park, Maryland. April, 1932

Instant Bordeaux. Circular 60, West Virginia Experiment Station, "describes a simple, rapid, and exact method of preparing Bordeaux mixture. The designation 'Instant Bordeaux' has been coined to distinguish Bordeaux prepared by this method from that prepared from stock solutions."

In preparing this material powdered copper sulphate designated as "snow" and superfine chemical hydrated lime known as high calcium hydrate are used.

The only equipment necessary is a small hand shovel, kitchen scales, and a few buckets. For a 300 gallon spray tank of Instant Bordeaux, 2-4-50 formula, weigh out 12 pounds powdered copper sulphate and 24 lbs. superfine chemical hydrated lime.

Begin filling spray tank with water preferably from overhead intake pipe. When tank is one-fourth full of water start engine running and pour the copper sulphate upon the intake strainer and wash into tank by inflowing water.

When tank is three-fourths full add lime in same manner. Keep agitator running for one minute after tank is full when Bordeaux will be ready to spray.

The preparation of Instant Bordeaux is not quite so easy in traction outfits but it can be done. The copper sulphate dissolves readily if stirred with long handled paddle.

Some of the advantages of the method are cited as: (1) eliminates cost of special mixing tanks, (2) eliminates slaking of lime, (3) both materials can be stored indefinitely in a dry place, (4) cheaper than ordinary form considering cost, time, and labor, (5) more uniform in quality, (6) has higher suspension percentage, (7) will not clog nozzles, (8) results in control of diseases equal to ordinary Bordeaux.

Freezing in the South. March freezes have undoubtedly done immense damage to early vegetable crops in many of the southern states. Where extensive replantings are made this will delay the marketing to such an extent that southern vegetables are likely to compete more strongly with Maryland crops than would be the case in a normal season. Growers will do well to follow closely the market reports which may be obtained from the Bureau of Agricultural Economics, Washington, D. C.

Lack of Uniformity in Vegetable Seeds. Many growers have had the experience of finding supposedly good seed of poor germination or mixed or in extreme cases entirely different from the variety purchased. There are undoubtedly unscrupulous dealers, but even reliable seedsmen sometimes fall down in these respects. Mistakes occur in the most efficient establishments and the seedsmen themselves are sometimes at the mercy of the seed growers for rarely do they themselves produce all the seed they sell.

The grower usually has little redress other than reimbursement for the cost of the seeds. The price of good seeds is a relatively small item in the production of a crop, but when the best apparently obtainable disappoints, the grower is unhappily situated.

With certain crops such as tomato the grower could undoubtedly save his own seed to advantage and be assured not only of good germination, but also develop a standard of uniformity which would be highly desirable.

Testing Soils. Laboratory tests for soils are gradually being perfected so that the time may come when it will be possible to tell more accurately the fertilizer needs of particular soils. Tests for lime requirements have long been in use. More recently a test for available phosphoric acid has been added. In many cases it seems to give promising results as does a rather complicated potash test. Soils are, however, of very complex make-up and the many factors involved render this a difficult field for study. Devising methods of investigating these problems requires as much ingenuity as it does to make the study itself.

Changes are taking place too in the fertilizers. The tendency is toward more concentrated forms and to greater solubility. Improvements have been made especially with the nitrates so that they can be distributed more readily and more uniformly.

The McDonald Crimson Rhubarb. This is a new variety originating at the MacDonald College, Quebec, Canada. It is described as follows:

"It is a very highly colored, attractive red stalk, of large size, productive, very tender, and succulent, and of excellent quality, and particularly desirable for pies and desserts. Its color when cooked without peeling is as attractive as raspberries."

The variety has been tested out by several Experiment Stations and seems to be promising. Anyone contemplating plantngs in the future would probably do well to test out this variety in a small way. It is being distributed by the Daniels Nursery, Long Lake, Minnesota.

Rhubarb of course requires about the same conditions of soil and fertility as does asparagus. The crowns may readily be forced but must first be subjected to low temperatures. This necessity prevents serious competition from the southern states. Rhubarb is undoubtedly more subject to crown rots in the warmer sections of the country. Warm, moist spells in summer are conducive to the development of rhubarb diseases.

Sweet Potato Plant Treatment for Control of Stem Rot and Scurf. Treatment of sweet potato plants with organic mercury compounds has been found to protect them from becoming infected with the stem rot and scurf diseases. Best results have been obtained with 6 per cent chlorophenol and 2 per cent nitrophenol mercury diluted at the rate of one part of the chemical in twenty parts water. (This material is sold under the commercial name of Semasan Bel). The roots of the sweet potato plants should be dipped in this solution just before transplanting to the field. In some instances injury to plants has resulted from the use of compounds containing a larger proportion of nitrophenol mercury.

Sweet potato growers who plan to treat their plants should exmaine the containers of the material they intend to use and see that they contain 6 per cent chlorophenol and 2 per cent nitrophenol, and that it does not contain 12 per cent nitrophenol and 2 per cent chlorophenol since injury to the plants may result from the use of these chemicals in the latter proportions. (12 per cent nitrophenol and 5 per cent chlorophenol is sold under the commercial name of Improved Semesan Bel).

VEGETABLE GROWERS NEWS LETTER

Issued by
The Maryland Vegetable Grower's Association
W. R. Ballard, Secy.-Treasurer.

Vol. IX No. 5 College Park, Maryland May, 1932.

The Annual Report

The Report of the Association giving the papers presented before the annaul meeting in Baltimore last January have just been mailed to the members. If any member fails to receive a copy, the Secretary should be notified.

Cut Worms

The season seems to have beenfavorable for the depredations of this injurious pest. In some recent plantings of tomatoes, more than fifty per cent of the plants have been cut off. It is particularly important to avoid the use of sod land for plants such as the tomato and cabbage.

Probably the best way to fight this insect is to put out a poison bait. This may be made up as follows:

Bran . . 8 pounds
Paris green . . . . 4 ounces
Salt . . . . 2 ounces
Cheap syrup . . . 1 pint

Mix the dry ingredients thoroughly then add the syrup and enough water to make a moist crumbly mash. Spread this bait along the rows.

Advertising Vegetables

It is very likely that the good grower of vegetables could greatly increase his sales by judicious advertising. This is particularly true where the grower puts up the product in the retail package. If no more than the name and address of the grower appeared on the package, it is believed that this would be productive of return sales. Farmers generally pay too little attention to the proper marketing of their produce. There are possibilities in the line of advertising which are worth looking into. Of course, the product must have the quality, must be properly graded and packed in order the reap the greatest benefits from persistent advertising.

Rain !

The recent rains were so heavy in some quarters as to result in flood conditions. At College Park the last spell amounted to over three inches of railfall. This being almost the normal monthly precipitation. Growers have been held up with their work the land being too wet to work!

Wet conditions often result in severe attacks of various fungi.

New Insecticides

The U. S. D. A. is experimenting with new forms of plant poisons, some of which show promising results. The fish poisons used by natives are under scrutiny and some seem quite promising. One such poison is said to be nineteen times more poisonous to certain insects and in addition is harmless to man. No doubt the future will bring us entirely new weapons for waging the perennial fight with insect pests.

The Department of Horticulture of the Maryland Experiment Station has undertaken the problem of developing improved varieties of the white potato. Until relatively recent years little attention has been given to the potato from the standpoint of developing new varieties adapted to the wide range of conditions under which it is grown. No new varieties of outstanding importance have been developed during the last 35 years or more. Recently, however, efforts are being made to develop new varieties that will be of better table and storage quality or that may be better adapted to the soil and climatic conditions under which they are being grown.

In Maryland efforts will be made to develop varieties more suitable for the truck or early market crop grown in Southern Maryland and the Eastern Shore. In this section also a vareity is greatly needed to replace the McCormick and Jersey Red Skin for the fall and winter market and for home consumption. In western Maryland the problem of developing varieties to supplement or replace the Green Mountain Burbank, or Rural which will be better adapted to the soil and seasonal conditions of that section will be given consideration. Table quality, yielding ability, storage quality, smoothness, depth of eye, color, shape, season of maturity and many other factors will be considered in developing these varieties.

A great deal of progress in potato improvement has already been made by the U. S. Dept. of Agriculture and by other states. One new variety, the Katahdin, was named and introduced by the U. S. D. A. recently and is now being tested in Maryland. The Dept. of Horticulture will have approximately 150 varieties under test this year and will grow many seedlings from which to select other varieties. It is hoped that after thorough test several of these varieties will prove definitely superior to those now being grown and will be valuable additions to the list of horticultural varieties of this important crop.

Vegetable Grower's New Letter
-Issued by -
The Maryland Vegetable Grower's Association
W. R. Ballard, Sec't.-Treas.

Vol. IX No. 6. College Park, Maryland June 193?

The Beans of New York

Part Two of Volume I of Vegetables of New York has just been issued. This report is a companion to the Peas of New York issued in 1928. It discusses the history of American Garden beans, systematic botany, and description of varieties.

Thirty-nine page illustrations in color add greatly to the value of the publication. Other reports to follow will cover all the major crops of vegetables.

Soil Acidity Studies

Bulletin 536 published by the Agricultural Experiment Station of Cornell University gives the results of studies of soil acidity in relation to Potatoes, cauliflower and other vegetables on Long Island. The summary herewith reproduced will give a general idea of the conclusions:

" Two series of plots, one hundred and thirty in all, have been used to determine the response of various crops to varying degrees of soil acidity. Applications of lime, of sulphur, and of sulphuric acid have been used to vary the soil reaction. The plots in a given series have received uniform care in all cultural operation; soil reaction, only, was purposely varied.

The results obtained during four years with various crops on these soil acidity plots are given here. Many of the crops were grown only once and some for only a part of their normal growing season. The results obtained with those are, of course, to be taken only as affording some indication of their response to varying degrees of soil acidity.

The results with cauliflower show that the range of soil reaction for the maximum production of this crop on this soil is between pH 5.5 and 6.6. More results are needed to confirm these figures. A very striking and Dwarf Erfurt, in their response to varying degrees of acidity was brought out on these plots and it suggests the possibility of developing varieties of cauliflower that will be resistant to acid-soil conditions.

The results obtained with potatoes are especially important as this crop is quite generally regarded as one that will grow well on acid soils. The fact that soils may be too acid for the best growth of potatoes has been largely overlooked or not sufficiently stressed. Since decreased yields from this cause are not made plainly apparent by characteristic symptoms, such decreased yields are commonly attributed to the "seed" that was used or to the fertilizer that was applied. The results reported here indicate that many Long Island potato growers have sustained severe losses because they have allowed their fields to become too acid. The figures presented show that on this soil a reaction between pH 4.8 and 5.4 should be maintained if potatoes are to be grown on the same soil year after year.

In other words, as far as this one factor of soil reaction is concerned, the highest yields of marketable potatoes will be obtained when the reaction of the soil is kept just sufficiently acid to guard against serious losses from scab.

The use of liming materials to reduce the acidity of these potato fields may easily result in the production of scabby potatoes, unless proper precautions are taken to avoid excesses. Even on the most acid of these fields a single application of liming material should rarely exceed the equivalent of 500 or 600 pounds of hydrated lime to the acre.

Increases in soil acidity may be avoided by the use of liming materials in quantities sufficient to counteract the acidifying effects of the fertilizers applied, or by the use of fertilizers that do not tend to increase the acidity. The relative cost of the two procedures largely determines the course to follow.

Porblems in the control of soil reaction vary with soil types and systems of farming. The suggestions given here are intended for Long Island conditions and practices; they may or the may not apply elsewhere."

The annual meeting of the Eastern Shore Potato Growers washeld at the farm of Mr. M. T. Pilchard, Pocomoke City, Maryland, on Friday, June 17, 1932, under the management of the county agent, Mr. E. T. Grant. About eighty people were present.

Professor J. E. Metzger and Mr. E. H. Schmidt of the University of Maryland Experiment Station conducted the growers on an inspection of the rotation and fertilizer plots, explaining methods, plans and results of the plots. These plots are arranged to compare new fertilizers with the standard 6-6-5(old 7-6-5), as well as to determine the effect on yield when lime is applied with fertilizer. Lime applications are made direct to soils in comparison with carbonate of lime filler carried in the fertilizer. The efficiency of various cheap sources of nitrogen when used in potato fertilizer mixtures, as well as the use of concentrated fertilizer and their methods of application were shown in the various plots. An economic study of rotation is carried on in certain plots, attempting to greatly increase acre production without increasing production costs.

Dr. R. A. Jehle, Extension Pathologist, explained the various plots dealing with tuber unit and tuber index as a means of seed improvement and disease control. Potatoes from various seed sources were shown in these plots and various spray mixtures and their efficiency were demonstrated.

Interesting talks were given by Dr. E. N. Cory, and Mr. T. H. White of the Maryland Experiment Station; and Mr. G. V. Hoagland, of the U. S. Department of Agriculture, regarding insect control, various cultural methods and the results of placing of fertilizer at planting time.

Machinery exhibits, spraying demonstrations and a short tour of the fields of potato growers in the vicinity concluded the day's meeting.

This is a new departure from the potato meetings held in the past and the growers displayed much interest in the work that is going on.

APPROVED: Dr. T. B. Symons.

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Vegetable Grower's News Letter

Issued by
W. R. Ballard,
Secretary -- Treasurer,
The Maryland Vegetable Growers Association

Vol. IX No. 7 College Park, Md. July, 1932

Planting Late Potatoes

Because of the fact that the potato is a cool climate plant, it is customary in the warmer regions of Maryland to plant the late crop at such a time as to insure tuber formation in the cooler weather of the fall season. One of the difficulties involved in the placing of cut potatoes into the hot soils of July is that rot readily attacks the tubers and this results in poor stands and consequent lowered yield.

The experience of the Experiment stations suggests the following observations. Varieties such as Green Mountain, Rural New Yorker, Russet Rural and similar sorts should be kept on cold storage until a short time before they are to be planted. Tubers should be cut into about egg-size for optimum yields. Contrary to general opinion, the surfaces of cut pieces cork over better if kept moist than if allowed to dry out when planting is not done immediately after cutting.

Planting medium sized potatoes whole gives better stands than where larger potatoes are cut.

One reason for advocating the planting of the Jersey Red Skin variety in Maryland is that it seems better adapted to standing high temperatures than the varieties generally grown in cooler sections. Tubers may be kept in common storage, cut and planted in mid-summer with a greater degree of success than with most other varieties. Even this variety will be better if kept on cold storage until near the planting date.

Better stands are secured where certified seed stocks are utilized as there is less disease to be spread around when tubers are cut. Maryland is building up stocks of certified seed potatoes and growers of the State should make use of those supplies.

When is Enough Fertilizer Enough?

A practical question for the thoughtful vegetable grower is the point when diminishing returns is reached in the use of fertilizers. If a certain crop gives a 100% increase in yield when 1000 pounds of fertilizer are used per acre, the probabilities are that the application of 2000 pounds of fertilizer would not give a 200% increase but only 125% in which case it would seem to be the sensible thing to apply the larger amount to <u>two acres</u>. It is obvious that this procedure would result in relatively greater profit. On your soils, on your crops, and under your conditions, do you know just what quantity of fertilizer applied each year will give you the best total returns? A study of this problem would seem to be a good economy move.

Does Grading Pay You?

In times of low prices many growers feel that it does not pay to grade vegetables. Labor costs are so high that this added expense does not seem justified. In the search for cutting costs the temptation is strong to use old or used containers. If one has an established place on the market, however, such practices may well prove to be penny-wise, but pound foolish. Particularly

may this be true when competing areas are forging ahead adopting new methods of displaying their products so as to tempt the buying public. The recent move to use cellophane for wrapping vegetables is an example of the recent attempts to display vegetables in an attractive way. Returns upon such additional outlays may not be great but if the fancy of the buying public is captured it leaves such growers in a strategic position when higher prices return. Economists point out that the nearer the grower can approximate the retail package the greater his proportion of profit between cost of production and the price the consumer pays.

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Some one remarks: "I would not call this a depression. I would say it was the smallest boom I have ever seen!"

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Insect Pests

For some reason, perhaps, the mild winter, insects of various sorts have been plentiful this year. The necessity for using control measures adds considerably to the cost of production of vegetable and other crops.

The red spider seems to have been unusually severe in its attacks this year. Its greatest damage is done no doubt to evergreens and other ornamental plants.

Scouts seem to be finding increased numbers of Japanese beetles in the infested areas. Fortunately the spread so far in Maryland has been relatively slow. It is only a question of time, however, when this insect is established over a large part of the State. They occur in such numbers and feed on so many plants that immense damage is done in heavily infested areas. Additional expense will be required for controlling this new pest.

Diagnosing Obscure Troubles

Specialists of the University are often called upon to diagnose troubles which growers have with various crops, the causes for many of which are often obscure. Experienced pathologists are familiar with a number of injures to stem, foliage, and fruit not due to any specific organism. Many of these are due to unusual weather conditions, poorly drained soil, or soil lacking in moisture.

One of the most frequent sources of such troubles is the attempt to grow crops not adapted to the climate. The cool climate vegetables are particularly susceptible to injury from the burning sun especially when hot spells follow seasons of cloudy, rainy weather. Under these conditions the foliage becomes tender and then is easily burned by the sun's rays. Such plants, too, become devitalized under unfavorable conditions and are more subject to attacks from disease and insect pests.

Many troubles appear which may be traced to injury from caustic fertilizers especially when large quantities are used in the row or where carelessly applied as a top dressing. The germination of many seeds is positively retarded or prevented when excessive fertilizer applications come in contact with the seeds.

Poor drainage in times of abundant rains sometimes results in a condition where the absorbing root hairs are killed off or prevented from forming and even with an over abundance of moisture, the plant wilts down because of the inability to take up the soil moisture.

The effect of dry conditions often shows up as tip-burn. Because of the lack of moisture supply in the soil, the roots are unable to pump up sufficient sap to keep the leaves from wilting and finally drying up. Undoubtedly many of our vegetable crops would succeed better if excessively high temperatures could be avoided in the summer season.

COOPERATIVE EXTENSION WORK
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STATE OF MARYLAND

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U. S. DEPARTMENT OF AGRICULTURE
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EXTENSION SERVICE

Vegetable Growers' News Letter

Issued by
W. R. Ballard,
Secretary-Treasurer,
Maryland Vegetable Growers' Association.

Vol. IX, No. 8. College Park, Maryland. August, 1932

Results of Potato Spraying Tests - 1932: The value of Bordeaux mixture in addition to poison in potato spraying was demonstrated in potato spraying tests conducted this year on spring grown Irish Cobbler potatoes in Worcester County on the farm of W. T. Pilchard, Pocomoke, Maryland. The potatoes were sprayed five times with a traction sprayer, spray material being applied at a 250 to 300 pound pressure.

One plot was sprayed with calcium arsenate, 2 pounds to 50 gallons of water, another plot was sprayed with 4-4-50 Bordeaux mixture to which 2 pounds of calcium arsenate was added to each 50 gallons of the mixture, and another plot was sprayed with 4-4-50 Bordeaux mixture to which 2 pounds of calcium arsenate and three-fourths of a pint of nicotine sulphate were added. The plot sprayed with calcium arsenate yielded only 142 bushels of primes and 59 bushels of culls per acre. The plot sprayed with Bordeaux mixture, calcium arsenate and nicotine sulphate yielded 166 bushels of primes and 28 bushels of culls per acre and the plot sprayed with Bordeaux mixture and calcium arsenate yielded 166 bushels of primes and 63 bushels of culls per acre. Where Bordeaux mixture was used with the calcium arsenate early blight was prevented and flea beetle was much less than when calcium arsenate was used alone. This probably accounts for the increase in the yield of primes obtained in these plots.

Full directions for spraying potatoes will be found in Extension Bulletin No. 58 on POTATO PRODUCTION AT LOWER COSTS BY DISEASE AND INSECT CONTROL. In this bulletin spraying with Bordeaux mixture is advised in all parts of the state west of Chesapeake Bay. Tests conducted during the past two years indicate that it will pay to use Bordeaux mixture east of Chesapeake Bay also.

Certification in Garrett: Eighty-seven growers in Garrett County applied for inspection of their potato fields this season. Thirty-nine of these were 4-H Club members and 48 were adults. Of these, 24 4-H Club

members with 22.25 acres qualified while 35 adults with 78.5 acres passed satisfactory inspections. This makes a total of slightly over 100 acres. The bulk of these potatoes are Russet Rural and Smooth Rural with a small percentage of Green Mountain and Irish Cobbler.

New Potato Variety Gives Largest Yield in Seed Source Tests in Worcester County: The largest yield on the early potato seed source tests conducted near Pocomoke in Worcester County was obtained from a new variety of potatoes, known as the Katahdin.

Seed used in the test was grown in Maine, where it was originated, by the U. S. Department of Agriculture. This is the first time that tests with Katahdin potato have been made in Maryland. It was compared with some strains of northern grown second crop Irish Cobblers. It matured two weeks later than the northern grown cobbler and one week later than the home grown cobbler. Comparative yields in bushels per acre between the Katahdin and the Cobbler were as follows:

	Primes.	Culls.	Total
Katahdin	248	32	280
Average yield of seven strains of home grown second crop Cobblers.*	186	22	208
Average yield of seven strains of northern grown Cobblers.	184	34	218

Market Gardeners Have Troubles: In the past market gardeners around the large cities were usually able to do very well because of the ability to furnish the local trade with a good assortment of fresh quality vegetables. The gasoline truck has changed this situation entirely. Vegetables grown on much cheaper land can be trucked quickly into market from farms a hundred or more miles away. On high priced land the market gardeners are finding it hard to meet this competition.

The development of chain stores has also complicated the situation as their buyers are not interested in offerings unless they are in large quantities and well graded. There will still be limited opportunities for those producing extra quality vegetables for the independent grocer who has a discriminating trade.

It seems quite clear, however, that in the future most of the supplies of fresh vegetables will come from the outlying districts.

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*The largest yield of primes obtained from any cobbler strain was 203 bushels per acre from home grown seed.

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VEGETABLE GROWER'S NEWS LETTER

Issued by
The Maryland Vegetable Grower's Association,
W. R. Ballard, Sec'y-Treasurer.

Vol. IX, No. 9 College Park, Maryland Sept. 1932.

Putting the "Pep" in Peppers: Professor A. T. Erwin, of the Iowa State College of Agriculture has recently published the results of a thorough study of this group of native tropical American plants. This represents one of the few vegetables still found abundantly in the wild state. The bulletin (The Peppers, Bul. No. 293, Agr. Exp. Sta., Ames, Iowa) gives considerable space to botanical relationships and classification of varieties as well as to the culture of the pepper. A description of the common diseases affecting this crop is also given.

Florida has the largest commercial area devoted to this crop with New Jersey and Louisiana ranking second and third respectively.

A new industry which has developed in recent years is the canning of pimentos. It had to await the invention of Mark Riegel in 1914. Unlike many other vegetables, the skin of peppers is not loosened by scalding. Riegel's machine roasts the peppers which causes the skin to "blister". California and Georgia are the two important producing centers for pimentos. The domestic pack amounts to about a half million cases annually. It appears that there is considerable room for expansion in the production of this crop since 3,138,746 pounds were imported in 1929.

The Harlequin Cabbage Bug: In the Southern States this insect is very destructive to cabbage, radishes, turnips and similar crops. In ordinary seasons it is not of great importance in Maryland since it must migrate from the south and seldom occurs in sufficient abundance to do much damage. It appears, however, to have wintered over last winter due to the very mild temperatures. The adults were thus enabled to lay eggs early enough so they have multiplied greatly in some sections. It is very difficult to comtrol this insect and effective remedies often cost more than these particular crops are worth in the average season. Many growers will no doubt look for a winter sufficiently severe to prevent their wintering over here in appreciable numbers.

Winter Storage of Vegetables: There are many forms of vegetables which can be stored in their natural condition for use or for sale during the winter months. For large commercial operations, carefully planned and built storage houses are needed. On the farm more modest structures may take care of moderate needs. In fact many vegetables such as turnips, carrots, potatoes, etc. keep quite well in ordinary outdoor banks or pits. One disadvantage of this method of storage is the difficulty of getting out small quantities for use in severe winter weather. For home use it is sometimes an advantage to place several kinds of vegetables in the one pit so that some of each sort may be removed without opening several different pits.

Details as to various types of storage facilities and successful methods of storing some of the more common vegetables may be found in Farmer's Bulletin No. 879, Home Storage of Vegetables.

Improving The Lima Bean: The lima bean is one of the most important forms of this varied group of food products coming from the garden. In some parts of the State the pole type is grown, the product of a number of growers being combined for shipment to distant markets. The method involves considerable expense and labor and these factors preclude large scale operations. The pole type, however, is a heavier yielder than the bush form and is generally more profitable.

The University of Maryland is conducting some studies of the reasons for low yields of the lima bean. Most varieties produce an enormous number of flowers but only a small percentage set and mature good, well-filled pods. The difficulty may be a question of self-sterility. At any rate it is hoped that studies in progress may throw some light on this problem.

The grower, however, need not await these results before bettering his crop. Tests made in California and reported about ten years ago indicate that from 15% to 25% increases in yield can be made simply thru continued selection of the better individuals. This possibility is confirmed by the experience of the writer working with a mottled type much grown in the Southern states. Selection over a period of five or six years nearly doubled the size of the beans. The stock, however, has unfortunately been lost. It is probable that this sort of selection would need to be kept up regularly to prevent deterioration.

What Would You Like To Hear?: It will soon be time for the annual meeting of the Association and the program must be worked out in the next few weeks. It is desired to have speakers of ability to discuss the problems which are of timely interest to the growers and this is your opportunity to suggest to the Secretary, the questions of vital interest to you in the production or marketing of vegetables. What are the problems confronting you? A hint from you will be appreciated.

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VEGETABLE GROWER'S NEWS LETTER

Issued by
The Maryland Vegetable Grower's Association,
W.R.Ballard, Sec't-Treas.

Vol. IX. No. 10 College Park, Md. October, 1932.

Kainit Checks Pock: Dr. R. A. Jehle reports that in preliminary tests with Big Stem Jersey sweet potatoes in Wicomico County, kainit seemed to have some effect in the control of the pock disease.

Plots treated with 200 lbs. of kainit per acre yielded 144 bushels per acre and showed the following in regard to the prevalence of disease:

Clean tubers 77.5%
Pock 23.2%
Scurf 0.75%
Black rot 0.5%

Plots receiving 100 lbs of sulfur yielded 120 bushels per acre and showed:

Clean tubers 56.2%
Pock 39.0%
Scurf 7.0%
Black rot 3.2%

The check plot with a yield of 116 bushels showed:

Clean tubers 42.2%
Pock 53.7%
Scurf 4.0%
Black rot 2.2%

If similar results follow further tests, kainit will have several advantages over sulfur. The continued use of sulfur has detrimental effects on the soil.

New sweet potato brings increased price on New York market: A new sweet potato known as the Maryland Golden Sweet originated by Mr. T. H. White of the Maryland Experiment Station has been selling on the New York market at twenty-five cents per bushel more than other varieties. The reason for its popularity on the New York market is its rich golden color which is present both outside and inside.

In New York, baked sweet potatoes are sold upon the streets and this variety is highly esteemed for this purpose on account of its color. It has also been found to make excellent sweet potato pies. So popular has it become in New York that its merits were broadcast over the radio.

The Maryland Golden Sweet has other characteristics which make it popular for the sweet potato grower. It is ten days earlier than the Bigstem and is a very good yielder. On one farm in Wicomico County the Maryland Golden Sweet yielded 292 bushels per acre compared with 180 bushels per acre from the Bigstem. Both varieties were grown in the same field under the same conditions.

Thirteen acres of Maryland Golden Sweet potatoes passed the field inspection for certification. Anyone interested in purchasing seed should get in touch with Mr. J. P. Brown, County Agent, Salisbury, Maryland.

Detrimental Soil Organisms: Man has tilled the soil from time immemorial, yet despite experience and long continued research, the soil is still unknown in many of its aspects. Particularly is this true in the field of soil organisms. There are a host of these, some beneficial, others distinctly harmful to the crops that man attempts to grow.

Illustrations of detrimental forms are the wilt of tomato, "yellows" disease of cabbage, pea root rot, and the various so-called "damping -off" fungi. Some of these live over in the soil for several years, so that rotation periods of some length are needed to avoid serious damage. This factor, of course, emphasizes the value of resistant strains.

Mr. Thomas H. White, has for several years attempted to grow chrysanthemums in the greenhouse without changing the soil. The soil seems to get into a condition in which the mums do not respond properly. After trying various combinations of fertilizers without very satisfactory results, he this past season had the beds sterilized. The growth of the mums after this treatment has been all that could be desired. This perhaps indicates that the reason crops do not always respond to fertilizer treatment as well as expected may be due to injuries to the root system by some of these soil organisms.

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VEGETABLE GROWER'S NEWS LETTER

Issued by --
W.R. Ballard,
Secretary-Treasurer, Md. Veg. Growers Assn.

Vol. 9. No. 11 College Park, Maryland November, 1932.

The Canning Conference: The annual Extension Service conference on canning crops was held Monday, November 7th. at Elkton. County Agents from counties where the industry is of major importance were present as well as specialists from the University of Maryland, representatives of the TriState Packers Association and the National Canners Association.

Statistics for the principal crops were presented by T. D. Holder, Canning Crops Specialist.

		1931	1932
Tomatoes			
	Acreage	34,000	29,000
	Average Yield, Tons	2.1	3.7
Sweet Corn			
	Acreage	39,700	20,100
	Average Yield, Tons	1.8	1.0
Peas			
	Acreage	15,360	11,000
	Average Yield, Pounds	1640	1020
Beans			
	Acreage	7,300	4,200
	Average Yield, Tons	1.4	1.2

Causes given for reduced acreages and for low yields were given as late planting, lack of fertilizer, low prices and unfavorable weather conditions.

In a test of bean varieties, Giant Stringless gave the highest yield with the others in the following order: Full Measure, New Stringless, Burpees' Stringless, Konserva, Green Refugee.

As a canning variety, Marglobe tomato stands high. Greater Baltimore is still grown to considerable extent. The Pritchard seems to have considerable promise but it apparently must be grown on fertile soil to maintain good size of fruit.

A number of growers entered the 10-ton tomato club but only a few were able to qualify.

The cloth covered cold frame is being used extensively in some counties. Southern plants were used by many growers. Queen Anne County secured some good plants from New Jersey.

The Tri-State Packers Association has produced and saved over 900 pounds of certified Marglobe seed which will be available for distribution next year to member canners and growers in the Tri-State territory. The seed saving has been conducted under the strict regulations of the Maryland Certification Board and the seed will be passed and sold under the certification seal. H.A. Hunter and Thos. D. Holder, canning crops specialists had joint

supervision over this work.

The Maryland Golden Sweet Potato seems to be making strides both for canning and market.

The Tangerine Tomato: A new type of tomato put in its appearance this season. It is the Tangerine, introduced as a novelty by Burpee. In addition to being a tomato of good appearance and quality, it is unique in that the skin and flesh is of a good, rich orange color. If it proves to be productive and adapted to Maryland conditions, it may have value for roadside stands and for local trade.

The Italian Squashes: These belong to the group commonly known as Vegetable Marrow. They are quite commonly grown in the European gardens and are considered superior in many respects to our American summer squash. Cultivation is similar although they succeed best with an abundance of well rotted manure. The Marrows are usually gathered before they ripen, peeled, divided and the seeds removed. They are cut into small squares and boiled until tender.

Two forms of the Italian Vegetable Marrow are now being grown in this country and are finding their way into local markets. The Cocozelle is a non-trailing type producing oblong fruits a foot in length and about 5 inches in diameter. The surface is handsomely marked with light and dark green.

The Zucchini is a comparatively new introduction and has become quite popular in the leading Pacific coast hotels; "It is a delicious summer variety, very prolific, tender and of a mild flavor. The fruits should be picked when 5 to 8 inches in length". It is prepared in the same way as other summer squash and is quite delicious fried in the same way as eggplant.

Interest in Mushrooms: Inquiries regarding the culture of mushrooms indicate renewed interest in the culture of this temperamental vegetable. The scarcity of manure is quite a serious factor in the commercial production of this crop. Various substitutes for manure have been tried but none of them have proven very satisfactory.

One of the essentials of success is the securing of fresh active spawn. The tendency in recent years has been in the direction of using liquid cultures and the production of such spawn has become quite a business. The commercial production of mushrooms in the East is centered in the vicinity of Philadelphia.

In dry summers followed by rains, mushrooms appear abundantly in pastures and meadows and many bushels are collected and marketed.

Farmers' Bulletin No. 1587, Mushroom Culture for Amateurs, gives the general procedure in the culture of this crop.

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VEGETABLE GROWERS NEWS LETTER

Issued by
W. R. Ballard
Secretary - Treasurer.

Vol. No. 9. No. 12 College Park, Maryland. December, 1932

MARYLAND VEGETABLE GROWERS MEETING

Wednesday, January 4, 1933.

10:00 — Call to Order and Appointment of Committees.

10:05 — Exporimental Results With Sweet Potatoes — Dr. V. R. Boswell, Senior Horticulturist, U. S. D. A.

10:50 — The Jersey Queen Cabbage - - - - - - - - - - - J. C. Walker, Plant Pathologist, University of Wisconsin.

11:35 — The Maryland Alaska Pea - - - - - - - - - - - Prof. C. E. Temple, Prof. Plant Pathology, University of Maryland.

Thursday, January 5, 1933

Symposium on Potatoes

Led by Dr. J. H. Beaumont.

10:00 The Potato Improvement Project, - - - - - - - - - Dr. J. H. Beaumont, Head, Dept. Horticulture, University of Maryland.

10:20 — Progress with Certification of Potato Stock,- Dr. R. A. Jehle, Specialist, Plant Pathology, University of Maryland.

10:50 — Cooperative Potato Breeding, - - - - - - - - - Dr. F. J. Stevenson, Geneticist, U.S.D.A.

11:20 — Handling potato Seed Stock, - - - - - - - - - Dr. William Stuart, Senior Horticulturist, U.S.D.A.

11:40 — The Maryland Golden Sweet Potato — - - - - - Mr. T. H. White,
Md. Experiment Station.

Report of Committees.

A recent change has been made in the above program. Dr. H. H. Zimmerley of the Virginia Truck Experiment Station could not attend the meetings, as was first scheduled, and Dr. William Stuart of the U. S. Department of Agriculture will give an address in place of Dr. Zimmerley.